

A method and apparatus compensates for phase noise added by a spectrum analyzer from phase noise measurements of a signal under test (SUT) taken by the spectrum analyzer. The method comprises the steps of measuring the phase noise of the SUT, determining the added phase noise of the spectrum analyzer, and applying a mathematical correction to the measured phase noise. A spectrum analyzer apparatus that compensates for added phase noise comprises a controller portion, a memory portion, a signal conversion and detection portion, and a compensation algorithm stored in the memory portion. A system that compensates for added phase noise comprises a controller having a control algorithm and a spectrum analyzer. The compensation and control algorithms are computer programs that implement the method of the present invention.